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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/593,078

**Applicant(s)**

NADEN ET AL.

**Examiner**

JESSICA KASSA

**Art Unit**

1616

**Period for Reply** -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 14 July 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-18, 20, 21, 24 and 25 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-18, 20, 21, 24 and 25 is/are rejected.
- 7) ☒ Claim(s) 16 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB-06)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

#### DETAILED ACTION

**Claims 1-18, 20-21 and 24-25 are pending and are under consideration in the instant office. Claims 19 and 22-23 are cancelled.**

#### Withdrawn Rejections

1. Claims 1-12, 20 and 22-23 were rejected under 35 U.S.C. 102(b) as being anticipated by Kessell (WO 03/041677 A2); claims 1-17, 19-20, and 22-23 were rejected under 35 U.S.C. 103(a) as being unpatentable over Kessell (WO 03/041677 A2), and further in view of Uniqema: Product catalog and formulation guide: Tioviel MOTG (applicant submitted prior art); and claims 1-16, 18-20 and 22-23 were rejected under 35 U.S.C. 103(a) as being unpatentable over Ha et al. (US Patent 5997887), and further in view of Kessell (WO 03/041677 A2). Applicants amendment overcomes these rejections since applicants have amended independent claim 1 to recite an **organic** dispersion wherein the percent of metal oxide particles are **at least 35% by weight**. Applicants have also amended claim 1 to specifying the polar and non-polar materials. Applicants have also cancelled claims 19, 22 and 23.
2. Claims 1-23 were rejected under 35 U.S.C. 103(a) as being unpatentable over Gers-Barlag et al. (US Patent 6838088 B2) in view of Kessell et al. (WO 03/041677 A2). The rejection of claims 1-20 and 22-23 are withdrawn as necessitated by applicants amendments. Applicants amendment overcomes this rejection since applicants have amended independent claim 1 to recite an **organic** dispersion wherein the percent of metal oxide particles are **at least 35% by weight**. Applicants have also amended claim 1 to specifying the polar and non-polar materials. Applicants have also cancelled claims

19, 22 and 23. However, the **rejection of claim 21** under 35 U.S.C. 103(a) as being unpatentable over Gers-Barlag et al. (US Patent 6838088 B2) in view of Kessell et al. (WO 03/041677 A2) **is maintained** since applicants have not amended the claim and applicants arguments do not overcome the rejection.

3. The rejection of claims 22-23 rejected under 35 U.S.C. 112, second paragraph are withdrawn since the claims have been cancelled.

4. Instant claims 1, 4-6, 8-12 17 and 20 were provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-11, 18-19, 27 and 29 of copending Application No. 10/495490 (Kessell) in view of Uniqema: Product catalog and formulation guide: Tioviel MOTG (applicant submitted prior art). Instant claims 1, 4-12, and 20 were rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-25, 28-30, and 38-43 of U.S. Patent No. 7101427 B2 in view of Uniqema: Product catalog and formulation guide: Tioviel MOTG (applicant submitted prior art). Instant claims 1, 4-12, 17 and 20 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-2, 4-10, and 12-15 of copending Application No. 10/574983 (Kessell et al.). Applicants amendment overcomes these rejections since applicants have amended independent claim 1 to recite an **organic** dispersion wherein the percent of metal oxide particles are **at least 35% by weight**. Applicants have also amended claim 1 to specifying the polar and non-polar materials. Applicants have also cancelled claims 19, 22 and 23.

***Claim Rejections - 35 USC § 112***

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 24 and 25 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The claims 24 and 25 recite the product of claim 20 wherein the product has an "improved skin feel." An "improved skin feel" is a relative term. Although applicants compare the instantly claimed invention with a "conventional sunscreen" (page 13 of the instant specification), there is no definition in the specification for "improved skin feel." Moreover, it is not even clear which "conventional sunscreen" applicants are using for their comparison.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under

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37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

**Claims 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gers-Barlag et al. (US Patent 6838088 B2) in view of Kessell et al. (WO 03/041677 A2).**

***Applicants' claims***

6. Applicants claim a sunscreen product comprising particles of metal oxide having a median volume particle diameter in the range from 24 to 42 nm, and (i) at least one polar material selected from the group consisting of are triethylhexyl triglyceride, C12-15 alkyl benzoate, caprylic/capric triglyceride, isononyl isononanoate, isostearyl neopentanoate, and octyldodecyl neopentanoate, and (ii) at least one non-polar material selected from the group consisting of isohexadecane, hydrogenated polyisobutene, and squalane.

***Determination of the Scope and Content of the Prior Art***

***(MPEP 2141.01)***

7. Gers-Barlag et al. disclose Pickering emulsions comprising microfine particles which are advantageously between 5 and 100 nm (abstract and column 5, lines 50 and 52). These emulsions may be used as sunscreens (column 10 lines 56-57). Specifically, example 1 comprises **titanium dioxide** and **zinc oxide particles**, **caprylic/capric triglyceride**, **mineral oil**, **hydrogenated polyisobutene**, **isohexadecane** and other components. The compositions disclosed by Gers-Barlag et al. may also contain **C<sub>12-15</sub> alkyl benzoate** and mineral oil (column 14, table). The examiner notes that extinction coefficients of the metal oxide particles and the interfacial surface tension of the solvents are inherent properties.

***Ascertainment of the Difference Between Scope of the Prior Art and the Claims***  
***(MPEP 2141.02)***

8. The instantly claimed median volume particle diameter lies within the range taught by Gers-Barlag et al.
9. Kessell discloses a metal oxide dispersion for use in a sunscreen product (abstract). The median particle volume diameter of the metal oxides is **preferably less than 45 nm** (page 2, lines 1-2 and 7-8). More specifically, the metal oxide dispersion has a median volume particle diameter particularly between **20 and 30 nm or especially between 24-27 nm** (page 5, lines 30 and 35).

***Finding of Prima Facie Obviousness Rational and Motivation***  
***(MPEP 2142-2143)***

10. It would have been prima facie obvious to one of ordinary skill in the art at the time of the present invention in order to further optimize the particle sizes of the metal oxide particles in order to ensure optimal sun screening and cosmetic properties. Moreover routine optimization is within the purview of the skilled artisan. The skilled artisan would have been motivated to optimize the particle sizes to produce a more transparent sun screening composition with broad ultraviolet light protection as taught by Kessell (page 1, lines 17-18 and lines 32-33).

**Response to Applicants Arguments**

11. Applicants argue that Kessell et al. disclose aqueous compositions comprising titanium dioxide in contrast to applicants dispersions of titanium dioxide in organic medium. Instant claim 21, however, does not specify an organic medium.



12. Applicants also argue that Gers-Barlag is directed toward Pickering emulsions in which the percent of particles is at most 30% in contrast to applicants 35% or more of metal oxide in the dispersion. Instant claim 21, however, does not specify the concentration of metal oxide.

**Claims 1-16, 18, 20 and 24-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dransfield et al. (US Patent Application Publication 2003/0223940 A1) in view of Kessell (WO 03/041677 A2).**

***Applicants' claims***

1. Applicants claim a dispersion comprising particles of metal oxide having a median volume particle diameter in the range from 24 to 42 nm, dispersed in an organic medium which comprises a mixture of at least one polar material having an interfacial tension of less than 30 mNm<sup>-1</sup> and at least one non-polar material having an interfacial tension greater than 30 mNm<sup>-1</sup>; wherein:

- i) the at least one polar material is selected from the group consisting of triethylhexyl triglyceride, C12-15 alkyl benzoate, caprylic/capric tri.glyceride, isononyl isononanoate, isostearyl neopentanoate, and octyldodecyl neopentanoate;
- ii) the at least one non-polar material selected from the group consisting of, C13- 14 isoparaffin, isohexadecane, paraffinum liquidum (mineral oil), squalane, squalene, hydrogenated polyisobutene, and polydecene; and
- iii) the dispersion comprises at least 35% by weight of metal oxide particles based on the total weight of the dispersion.

2. Applicants also claim a sunscreen product formed from a dispersion comprising particles of metal oxide having a median volume particle diameter in the range from 24 to 42 nm, dispersed in an organic medium which comprises a mixture of at least one polar material having an interfacial tension of less than 30 mNm<sup>-1</sup> and at least one non-polar material having an interfacial tension of greater than 30 mNm<sup>-1</sup>; wherein:
- i) the at least one polar material is selected from the group consisting of triethylhexyl triglyceride, C12-15 alkyl benzoate, caprylic/capric triglyceride, isononyl isononanoate, isostearyl neopentanoate, and octyldodecyl neopentanoate;
  - ii) the at least one non-polar material selected from the group consisting of, C13- 14 isoparaffin, isohexadecane, paraffinum liquidum (mineral oil), squalane, squalene, hydrogenated polyisobutene, and polydecene; and
  - iii) the dispersion comprises at least 35% by weight of metal oxide particles based on the total weight of the dispersion.

***Determination of the Scope and Content of the Prior Art***  
***(MPEP 2141.01)***

1. Dransfield et al. teach a particulate metal oxide wherein the mean particle diameter is less than 45 nm (abstract). Examples of suitable organic media include **C12-15 alkyl benzoate, C13-14 isoparaffin, caprylic/capric triglyceride, isohexadecane, isononyl isononanoate, isostearyl neopentanoate, isohexadecane, paraffinum liquidum (mineral oil), squalane, squalene, and mixtures thereof** (paragraph 0037). Surprisingly, dispersions, **particularly in an organic medium**, can be produced which **contain at least 35%**, preferably at least

40%, more preferably at least 45%, particularly at least 50%, especially at least 55%, and generally up to 60% by weight of the total weight of the dispersion, of metal oxide particles (paragraph 0041). Therefore, Dransfield renders obvious instant claims 1 and 18.

2. **Mineral oil** and **caprylic/capric triglyceride** have interfacial tensions of **51.7 mNm<sup>-1</sup>** and **25.6 mNm<sup>-1</sup>** with respect to water as evidenced by Frelichowska et al. (Pickering emulsions with bare silica Colloids and Surfaces A: Physiochemical and Engineering Aspects, 343, 2009, 70-74(table 2). Therefore, Dransfield et al. render obvious instant claim 13 and 14.

3. The particulate metal oxide according to the present invention has a median volume particle diameter in the range of especially **34 to 36 nm** (paragraph 0021). The mean crystal size of the titanium dioxide particles is expected to be the same as those used in the instantly claimed invention since the crystal types are the same. Therefore Dransfield et al. render obvious instant claims 2-3. The size distribution of the secondary metal oxide particles can also be an important parameter in obtaining, for example, a sunscreen product having the required properties. The metal oxide particles preferably have no more than **16% by volume** of particles having a diameter of especially **less than 32 nm**. In addition, the metal oxide particles preferably have more than **84% by volume** of particles having a volume diameter of especially **less than 40 nm** (paragraph 0022). Thereby rendering obvious instant claims 4-7

4. The metal oxide particles used in the present invention exhibit improved **transparency** preferably having an extinction coefficient at **524 nm** in the range of

especially **0.3 to 0.5 l/g/cm**(paragraph 0029). In addition, the metal oxide particles preferably have an extinction coefficient at **450 nm** in the range of especially **0.7 to 1.0 l/g/cm** (paragraph 0029). The metal oxide particles exhibit effective UV absorption, suitably having an extinction coefficient at **360 nm** in the range of particularly **5.5 to 7.5**, and especially **6 to 7 l/g/cm**. The metal oxide particles also preferably having an extinction coefficient at **308 nm** measured as herein described in the range of especially **45 to 55 l/g/cm** (paragraph 0030). The metal oxide particles preferably have a **maximum extinction coefficient** in the range from especially **55 to 65 l/g/cm**. The metal oxide particles preferably have a **wavelength maximum** in the range of especially **270 to 275 nm** (paragraph 0031). Therefore, Dransfield et al. render obvious instant claims 8-12.

5. Alternatively, the particulate metal oxide may be in the form of a **lotion or cream**. The particulate metal oxide and dispersions of the present invention are useful as ingredients for preparing **sunscreen compositions**. Therefore, Dransfield et al. render obvious instant claim 20.

6. The skin feel and the transparency of the sunscreen are properties which would also be shared by the sunscreen of Dransfield et al. thereby rendering obvious instant claims 24-25.

***Ascertainment of the Difference Between Scope of the Prior Art and the Claims***  
***(MPEP 2141.02)***

3. The instantly claimed ranges for particle diameter, percent of particle with diameters above or below the specified diameter, and the extinction coefficients vary

slightly from the instantly claimed ranges. The specific ratio of polar and non-polar materials is not taught by Dransfield et al.

4. Kessell discloses a metal oxide dispersion for use in a sunscreen product (abstract). The median particle volume diameter of the metal oxides is preferably less than 45 nm (page 2, lines 1-2 and 7-8). More specifically, the metal oxide dispersion has a median volume particle diameter particularly between 20 and 30 nm or especially between 24-27 nm (page 5, lines 30 and 35). The metal oxide particle size distribution is preferably narrow having no more than 16% of particles with a volume diameter less than 25 nm and more than 84% of particles having a volume diameter of preferably less than 40 nm (page 6 lines 1-3 and 5-6). The extinction coefficient of the particles at 524 nm is 0.7-1.0 l/g/cm (page 6, lines 29 and 34), at 360 nm is 6-7.5 l/g/cm (page 6 line 37 and page 7 lines 1-2), at 308 nm and a maximum extinction coefficient of 60-70 l/g/cm between 275 and 280 nm. Compositions disclosed include titanium dioxide in both polar (e.g. water and stearyl alcohol) and nonpolar (e.g. petroleum jelly) media (page 17, lines 11, 14, 20, and 21). Kessell discloses the use of anatase or rutile crystal forms of titanium dioxide (page 2, line 32) which have a mean length of 50-90 nm and a mean width of 5-20 nm (page 4 lines 30-32). Since these are the same crystal forms and dimensions disclosed in the specification of the instantly claimed invention (page 2, line 33 and page 4, lines 24-25 and lines 26-27), the mean crystal size of the titanium dioxide disclosed by Kessell and in the instantly claimed invention are expected to be the same.

***Finding of Prima Facie Obviousness Rational and Motivation***

***(MPEP 2142-2143)***

5. The values taught by Dransfield et al. are sufficiently close to the instantly claimed values for particle diameter, percent of particle with diameters above or below the specified diameter, and the extinction coefficients so as to render them obvious. The skilled artisan would be motivated to optimize the particle diameter, percent of particle with diameters above or below the specified diameter, and the extinction coefficients since Dransfield et al. teach the importance of suitable particle sizes and particle size distribution (paragraphs 0016 and 0017). The skilled artisan would also have been motivated to optimize the particle sizes to ensure the transparency of the particles while still maintaining the effective UV absorption (paragraph 0029 and 0030). The skilled artisan would have a reasonable expectation of success since routine optimization is within the purview of the skilled artisan. Moreover, the particle diameter, percent of particle with diameters above or below the specified diameter, and the extinction coefficients are taught by Kessell.
6. Optimization of amounts and thereby ratios of the polar and nonpolar components is routine and therefore obvious. The skilled artisan would be motivated to optimize amounts and ratios of components in order to produce an effective product. Since routine optimization is routine and within the purview of the skilled artisan, it is reasonably likely to succeed.
7. In light of the forgoing discussion, the Examiner concludes that the subject matter defined by the instant claims would have been obvious within the meaning of 35 USC 103(a).

8. From the teachings of the references, it is apparent that one of ordinary skill in the art would have had a reasonable expectation of success in producing the claimed invention. Therefore, the invention as a whole was *prima facie* obvious to one of ordinary skill in the art at the time the invention was made, as evidenced by the references, especially in the absence of evidence to the contrary.

**Claims 1 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dransfield et al. (US Patent Application Publication 2003/0223940 A1) in view of Uemura et al. (US Patent 5512277).**

***Applicants' claims***

9. Applicants claim a dispersion comprising particles of metal oxide having a median volume particle diameter in the range from 24 to 42 nm, dispersed in an organic medium which comprises a mixture of at least one polar material having an interfacial tension of less than 30 mNm<sup>-1</sup> and at least one non-polar material having an interfacial tension greater than 30 mNm<sup>-1</sup>; wherein:

- i) the at least one polar material is selected from the group consisting of triethylhexyl triglyceride, C12-15 alkyl benzoate, caprylic/capric tri.glyceride, isononyl isononanoate, isostearyl neopentanoate, and octyldodecyl neopentanoate;
- ii) the at least one non-polar material selected from the group consisting of, C13- 14 isoparaffin, isohexadecane, paraffinum liquidum (mineral oil), squalane, squalene, hydrogenated polyisobutene, and polydecene; and
- iii) the dispersion comprises at least 35% by weight of metal oxide particles based on the total weight of the dispersion.

***Determination of the Scope and Content of the Prior Art***

***(MPEP 2141.01)***

10. Dransfield et al. teach a particulate metal oxide wherein the mean particle diameter is less than 45 nm (abstract). Examples of suitable organic media include **C12-15 alkyl benzoate, C13-14 isoparaffin, caprylic/capric triglyceride, isohehexadecane, isononyl isononanoate, isostearyl neopentanoate, isohehexadecane, paraffinum liquidum (mineral oil), squalane, squalene, and mixtures thereof** (paragraph 0037). Surprisingly, dispersions, **particularly in an organic medium**, can be produced which **contain at least 35%**, preferably at least 40%, more preferably at least 45%, particularly at least 50%, especially at least 55%, and generally up to 60% by weight of the total weight of the dispersion, of metal oxide particles (paragraph 0041). Therefore, Dransfield renders obvious instant claims 1 and 18.
11. **Mineral oil** and **caprylic/capric triglyceride** have interfacial tensions of **51.7 mNm<sup>-1</sup>** and **25.6 mNm<sup>-1</sup>** with respect to water as evidenced by Frelichowska et al. (Pickering emulsions with bare silica Colloids and Surfaces A: Physiochemical and Engineering Aspects, 343, 2009, 70-74(table 2). Therefore, Dransfield et al. render obvious instant claim 13 and 14.
12. The particulate metal oxide according to the present invention has a median volume particle diameter in the range of especially **34 to 36 nm** (paragraph 0021). The mean crystal size of the titanium dioxide particles is expected to be the same as those used in the instantly claimed invention since the crystal types are the same. Therefore



Dransfield et al. render obvious instant claims 2-3. The size distribution of the secondary metal oxide particles can also be an important parameter in obtaining, for example, a sunscreen product having the required properties. The metal oxide particles preferably have no more than **16% by volume** of particles having a diameter of especially **less than 32 nm**. In addition, the metal oxide particles preferably have more than **84% by volume** of particles having a volume diameter of especially **less than 40 nm** (paragraph 0022). Thereby rendering obvious instant claims 4-7

13. The metal oxide particles used in the present invention exhibit improved **transparency** preferably having an extinction coefficient at **524 nm** in the range of especially **0.3 to 0.5 l/g/cm**(paragraph 0029). In addition, the metal oxide particles preferably have an extinction coefficient at **450 nm** in the range of especially **0.7 to 1.0 l/g/cm** (paragraph 0029). The metal oxide particles exhibit effective UV absorption, suitably having an extinction coefficient at **360 nm** in the range of particularly **5.5 to 7.5**, and especially **6 to 7 l/g/cm**. The metal oxide particles also preferably having an extinction coefficient at **308 nm** measured as herein described in the range of especially **45 to 55 l/g/cm** (paragraph 0030). The metal oxide particles preferably have a **maximum extinction coefficient** in the range from especially **55 to 65 l/g/cm**. The metal oxide particles preferably have a **wavelength maximum** in the range of especially **270 to 275 nm** (paragraph 0031). Therefore, Dransfield et al. render obvious instant claims 8-12.

14. Alternatively, the particulate metal oxide may be in the form of a **lotion or cream**. The particulate metal oxide and dispersions of the present invention are useful as

ingredients for preparing **sunscreen compositions**. Therefore, Dransfield et al. render obvious instant claim 20.

15. The skin feel and the transparency of the sunscreen are properties which would also be shared by the sunscreen of Dransfield et al. thereby rendering obvious instant claims 24-25.

***Ascertainment of the Difference Between Scope of the Prior Art and the Claims***  
***(MPEP 2141.02)***

16. Dransfield et al. do not specifically teach the incorporation of triethylhexyl triglyceride. **The examiner notes that triethylhexyl triglyceride appears to be nonstandard nomenclature. The examiner interprets triethylhexyl triglyceride to be a synonym of ethylhexanoic triglyceride.** This deficiency is cured by Uemura et al. (US Patent 5512277).

17. Uemura et al. teach a composition for maintaining the health of the skin (abstract). Example 8 specifically comprises squalane, **2-ethylhexanoic triglyceride**, and titanium dioxide (column 11).

18. The particle size range of Dransfield et al. also deviates slightly from the instantly claimed range.

***Finding of Prima Facie Obviousness Rational and Motivation***  
***(MPEP 2142-2143)***

19. It would have been obvious to the skilled artisan at the time the present invention was made to incorporate triethylhexyl triglyceride (2-ethylhexyl triglyceride) in the sunscreen composition of Dransfield et al. since it is structurally similar to triglycerides

disclosed already by Dransfield et al. Incorporation of one triglyceride instead of or in addition to another structurally similar triglyceride is obvious and within the purview of the skilled artisan. The skilled artisan would be motivated to incorporate the triethylhexyl triglyceride (2-ethylhexyl triglyceride) since Uemura et al. teach the incorporation of triethylhexyl triglyceride (2-ethylhexyl triglyceride) in a skin care composition which also comprises titanium dioxide. The skilled artisan would have a reasonable expectation of success since triglycerides are commonly used in skin care applications including sunscreens.

20. The values taught by Dransfield et al. are sufficiently close to the instantly claimed values for particle diameter so as to render them obvious. The skilled artisan would be motivated to optimize the particle diameter since Dransfield et al. teach the importance of suitable particle sizes (paragraphs 0016 and 0017). The skilled artisan would also have been motivated to optimize the particle sizes to ensure the transparency of the particles while still maintaining the effective UV absorption (paragraph 0029 and 0030). The skilled artisan would have a reasonable expectation of success since routine optimization is within the purview of the skilled artisan.

21. In light of the forgoing discussion, the Examiner concludes that the subject matter defined by the instant claims would have been obvious within the meaning of 35 USC 103(a).

22. From the teachings of the references, it is apparent that one of ordinary skill in the art would have had a reasonable expectation of success in producing the claimed invention. Therefore, the invention as a whole was *prima facie* obvious to one of

ordinary skill in the art at the time the invention was made, as evidenced by the references, especially in the absence of evidence to the contrary.

**Conclusion**

Claims 1-18, 20-21 and 24-25 are pending and are under consideration in the instant office. Claims 19 and 22-23 are cancelled. No claims are allowed.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JESSICA KASSA whose telephone number is (571)270-1342. The examiner can normally be reached on 5:30am- 2pm M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Johann Richter can be reached on 571-272-0646. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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